

TECHNICAL REVIEW DOCUMENT
for
RENEWAL of OPERATING PERMIT 97OPMF194

Questar Pipeline Company, Powder Wash Dew Point Plant
Moffat County
Source ID 0810049

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Revised June, September and November 2007

I. Purpose:

This document will establish the basis for decisions made regarding the applicable requirements, emission factors, monitoring plan and compliance status of emission units covered by the renewed operating permit proposed for this site. The original Operating Permit was issued June 1, 1999. The expiration date for the permit was June 1, 2004. However, since a timely and complete renewal application was submitted, under Colorado Regulation No. 3, Part C, Section IV.C all of the terms and conditions of the existing permit shall not expire until the renewal operating permit is issued and any previously extended permit shield continues in full force and operation. This document is designed for reference during the review of the proposed permit by the EPA, the public, and other interested parties. The conclusions made in this report are based on information provided in the renewal application submitted May 30, 2003, additional information submitted on July 6, 2004, June 18, August 31 and November 13, 2007, comments on the draft permit and technical review document received on October 25, 2007, previous inspection reports and various e-mail correspondence, as well as telephone conversations with the applicant. Please note that copies of the Technical Review Document for the original permit and any Technical Review Documents associated with subsequent modifications of the original Operating Permit may be found in the Division files as well as on the Division website at <http://www.cdphe.state.co.us/ap/Titlev.html>.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised construction permit.

II. Description of Source

The primary activity at the site is natural gas transmission (refrigeration plant), as defined under Standard Industrial Classification 4922. The Powder Wash Dew Point Plant consists of an ethylene glycol regeneration unit, a propane refrigeration unit, a natural gas fired internal combustion engine used to drive a generator to provide electricity to the plant and one condensate storage tank. Fugitive VOC emissions from equipment leaks exceed the APEN de minimis levels and are included as a significant emission unit in Section II of the permit. The purpose of the Dew Point Plant is to remove sufficient amounts of heavier hydrocarbons from the inlet gas to prevent condensation from forming in the residue gas (lowers hydrocarbon dew point).

The Powder Wash Dew Point Plant (PWDPP) is co-located with Questar Gas Management Company's Powder Wash Compressor Station (PWCS). For Title V operating permit applicability and prevention of significant deterioration (PSD) review requirements, the Division considers that the two facilities, PWCS and PWDPP, constitute a single stationary source. The equipment associated with the PWCS is addressed in a separate Title V operating permit (95OPMF031).

The facility is located approximately 50 miles northwest of Craig in Moffat County, in an area designated as attainment for all criteria pollutants. The facility is located at the northern tip of the Seven Mile Ridge off the dirt road running between Great Divide and Powder Wash. The facility is located within 50 miles of Utah and Wyoming and within 100 kilometers of two Federal Class I areas, Mount Zirkel and Flat Tops National Wilderness Areas. In addition, Dinosaur National Monument is federal land within 100 kilometers of the facility. This area has been designated by the State to have the same sulfur dioxide increment as federal Class I designated areas.

Condensate Tanks and Condensate Loading Equipment

In their renewal application, the source indicated that based on the revisions that were made to Colorado Regulation No. 3, regarding condensate storage tanks and condensate truck loading equipment (which took effect on December 30, 2002), that the condensate tanks and condensate truck loading equipment have emissions above the APEN de minimis levels and can no longer be considered insignificant activities. Previously, under Regulation No. 3, certain size condensate storage tanks and condensate truck loading equipment meeting a specified throughput limit were exempt from APEN reporting and permitting requirements and were considered insignificant activities for Title V operating permit purposes.

Condensate storage tanks and condensate truck loading equipment that was installed prior to December 30, 2002, are considered exempt from the minor source construction permit requirements, although such equipment would be subject to PSD review and Title V permit requirements if applicable. Any condensate storage tank or tank battery that commences construction or is modified after December 30, 2002 is subject to the

minor source construction permit requirements in Colorado Regulation No. 3, Part B, provided emissions exceed the APEN de minimis levels. According to the renewal application two of the existing condensate tanks in the tank battery were replaced in January 2003. Therefore, the condensate tank battery is subject to the minor source construction permit requirements, since the replacement of tanks is considered a modification. The Division presumes that the condensate loading equipment has not been modified and is not subject to the minor source permitting requirements.

Potential Prevention of Significant Deterioration (PSD) Issues

When the PWDPP equipment was installed adjacent to the PWCS, the facility was considered a major stationary source for purposes of PSD review requirements. At the time of application (July 1990), only emissions from the engine were considered as the Division was unaware that emissions from glycol regenerator still vents and flash emissions from condensate tanks were significant. The engine was permitted with emission limits that were below the PSD significance level; therefore, PSD review was not triggered at the time of the initial application (initial approval construction permit for the engine was issued on January 7, 1991). The appropriate applicable requirements for the glycol regeneration unit were included in the original Title V permit (issued June 1, 1999) as a combined construction/operating permit and again emissions from the PWDPP project were below the PSD significance level and PSD review was not required. When the Division learned that flash emissions from condensate tanks could be significant, the APEN exemption for condensate tanks and condensate loading equipment was removed, effective December 30, 2002. In the renewal application, the source submitted an APEN for their condensate tanks and condensate loading equipment because emissions exceeded the APEN de minimis levels. Estimated emissions from the condensate tanks alone, both actual and requested (potential), exceed the PSD significance level (40 tons/yr of VOC). Therefore, not only are the condensate tanks subject to the minor source permitting requirements, as discussed previously but also may be subject to PSD review. Assuming that current emissions from the condensate tanks reflect emissions at the time of the PWDPP application, PSD review should have been applied to the PWDPP project at the time of the initial application, unless the source chose to install controls or take other limitations to keep emissions from the project from exceeding the PSD significance levels.

The Division issued a notice of violation for the potential PSD violations on December 20, 2006. In an effort to address these issues the source has agreed to remove three of the condensate tanks from service and to leave one tank in service, with permitted VOC emissions less than 5 tons/yr. In addition, the source has agreed to install an enclosed flare (combustor) on the dehydrator. The combustor will be required to meet a control efficiency of 90%. A compliance order on consent (COC) is in progress to address these issues but has not been signed as of this date.

Compliance Assurance Monitoring (CAM) Requirements

CAM applies to any emission unit that is subject to an emission limitation, uses a control device to achieve compliance with that emission limitation and has potential pre-control

emissions greater than major source levels. The engine and condensate tank are not equipped with control devices; therefore, the CAM requirements do not apply to those emission units. The glycol dehydrator will be equipped with a combustor in order to address the potential PSD violations discussed above. However, uncontrolled emissions of the glycol dehydrator are less than the major source levels (100 tons/yr of VOC, 10 tons/yr of any individual HAP and 25 tons/yr of combined HAPS). Therefore, CAM does not apply to any of the emission units at this facility.

MACT Requirements

Questar Gas Management Company submitted an initial notification on June 20, 2000 indicating that the PWCS was a major source for hazardous air pollutants (HAPS) and was potentially subject to the requirements in 40 CFR Part 63 Subpart HH (Oil and Natural Gas Production MACT).

For purposes of 40 CFR Part 63 Subpart B §§ 63.50 thru 63.56 (112(j)), both Questar Gas Management Company (PWCS) and Questar Pipeline Company (PWDPP) submitted notifications prior to May 15, 2002 indicating their facility was not a major source for HAPS.

Since there is contradictory information regarding the facility's source status with respect to HAPS, the Division looked at HAP emissions for the facility during the review of the renewal application. Since the compliance date for the Oil and Natural Gas Production MACT (40 CFR Part 63 Subpart HH) was June 17, 2002, the Division looked at HAP emissions both before and after the addition of the new compressor engine and subsequent removal of three existing permit exempt engines at the PWCS.

Oil and Natural Gas Production (ONGP) Facilities MACT (40 CFR Part 63 Subpart HH)

Although, as indicated previously both the PWCS (95MF031) and the PWDPP are co-located and considered a single source for purposes of Title V and PSD review requirements, for purposes of determining MACT applicability for ONGP Facilities, there may be more than one facility at a single source that is aggregated for purposes of determining MACT applicability.

The PWCS gathers, compresses and dehydrates gas from gas field laterals and as such the compressor station qualifies as a production field facility. Production field facilities are facilities located prior to the point of custody transfer and for purposes of 40 CFR Part 63 Subpart HH, the point at which natural gas enters a natural gas processing plant is a point of custody transfer. The definition of facility in 40 CFR Part 63 Subpart HH, means "oil and gas processing equipment that is located within the boundaries of an individual surface site as defined in this section... examples of facilities in the oil and natural gas production source category include, but are not limited to, ...a compressor station that transports natural gas to a natural gas processing plant, and natural gas processing plants". The PWCS gathers field gas and transports it to the main pipeline, which goes through to the PWDPP for processing. Since the PWDPP extracts natural gas liquids from field gas (via a refrigeration unit), the PWDPP is considered a natural gas processing plant.

The PWCS and PWDPP equipment are located on separate surface sites and the equipment operates independently (i.e. when gas leaves the PWDPP it is not recompressed by any of the compressor engines at the PWCS). In addition, the PWDPP processes gas in the primary pipeline, which includes gas gathered from other areas, not just the fields gathered by the PWCS. Based on this information the Division considers that the PWCS and PWDPP are separate facilities for the purposes of ONGP MACT applicability.

For the PWDPP, HAP emissions from all equipment at the plant must be aggregated to determine major source status. The table on pages 18 - 19 of this document, shows that total HAP emissions from all of the equipment at the PWDPP are less than 25 tons/yr, with the highest single HAP at less than 4 tons/yr. Note that in this analysis HAP emissions from the ethylene glycol regenerator are based on the "worst case" GLYCalc run submitted with the renewal application and do not take into account the control device that will be installed on the unit in the future. Note that the ONGP MACT allows sources to use the maximum natural gas throughput rate to estimate emissions from glycol regeneration units rather than the design rate to determine source status for HAPS. Since the PWDPP equipment is not considered a major source for HAPS, the facility is not subject to the requirements in the ONGP MACT for major sources.

On January 3, 2007, the EPA promulgated ONGP MACT requirements for area sources (i.e. sources that are not major sources of HAP emissions). The area source requirements apply to triethylene glycol dehydrators at ONGP facilities. Since the dehydrator at the PWDPP is an ethylene glycol dehydrator, the area source MACT requirements do not apply to this unit.

Reciprocating Internal Combustion Engine (RICE) MACT (40 CFR Part 63 Subpart ZZZZ)

The RICE MACT adopts the facility definition in Subpart HH and allows sources to use the provisions in the ONGP MACT for calculating HAP emissions. This method allows for HAP emissions from glycol dehydrators to be based on the "maximum" natural gas throughput rate, rather than the design rate. Therefore, as discussed above, HAP emissions from the PWCS and PWDPP are not aggregated together to determine major source status for HAP emissions. The table on pages 18 - 19 of this document, shows that total HAP emissions from all of the equipment at PWDPP are less than 25 tons/yr, with the highest single HAP at less than 4 tons/yr. Note that as discussed above, in this analysis HAP emissions from the ethylene glycol regeneration unit are not based on the ONGP MACT method but are based on the "worst case" GLYCalc run submitted with the renewal application and do not take credit for the control device that will be installed on the unit in the future. Therefore, the RICE MACT provisions for major sources do not apply to this facility.

EPA proposed revisions to the reciprocating internal combustion engine (RICE) MACT (40 CFR Part 63 Subpart ZZZZ) to include requirements for area sources (e.g. sources

that are not major for HAPS). The proposed rule was published in the Federal Register on June 12, 2006. Under the proposed rule, existing 4-stroke lean burn engines are exempt from the provisions of Subparts A and ZZZZ as specified in 40 CFR Part 63 Subpart ZZZZ § 63.6590(b)(3). For area sources, existing engines are engines that commenced construction prior to June 12, 2006. Therefore, since the engine at the PWDPP is an existing engine, it is not subject to the proposed area source provisions in the RICE MACT.

Industrial, Commercial and Institutional Boilers and Process Heaters MACT (40 CFR Part 63 Subpart DDDDD)

As of July 30, 2007, the Boiler MACT was vacated; therefore, the provisions in 40 CFR Part 63 Subpart DDDDD are no longer in effect and enforceable. Note that as discussed below, the Division had determined that none of the equipment at this facility was subject to the Boiler MACT provisions.

While the MACT for industrial, commercial and institutional boilers and process heaters does include the definition of major source in the ONGP MACT, including the provision for production field facilities (aggregate only dehydrators and storage vessels with the potential for flash emissions), it does not allow for sources to use the provisions in the ONGP MACT to determine HAP emissions from the glycol dehydrators (i.e. base emissions on “maximum” natural gas throughput rate, rather than design rate). Therefore, as discussed above, HAP emissions from the PWCS and PWDPP are not aggregated together to determine major source status for HAP emissions. Since HAP emissions from the ethylene glycol regeneration unit are based on the “worst case” GLYCalc run submitted with the renewal application and not the ONGP method, the total HAP emissions, for purposes of this MACT, are as shown on pages 18 – 19 of this document and are below the major source level of 25 tons/yr of HAPS, with no single HAP above 10 tons/yr.

Organic Liquid Distribution (Non-Gasoline) MACT (40 CFR Part 63 Subpart EEEE)

In accordance with the provisions in 40 CFR Part 63 Subpart EEE §§ 63.2334(c)(1) and (2), organic liquid distribution operations do not include activities and equipment at ONGP facilities; therefore, the organic liquid distribution MACT requirements do not apply.

The summary of emissions that was presented in the Technical Review Document (TRD) for the original permit issuance has been modified to update actual emissions and to more appropriately identify the potential to emit (PTE) by addressing the changes to the PWCS (removal of a three uncontrolled, permit exempt engines and installation of a permitted engine with a control device) and the PWDPP (condensate tank emissions and control device on the dehydrator). Emissions (in tons per year) at the facility are as follows:

	Potential to Emit (tons/yr)
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Emission Unit	NO _x	CO	VOC	HAPS
PWCS Equipment				
P104 – engine, compressor	119.7	115.9	1	See Table on Pages 18 – 19
P304 – engine, emerg. gen.	8.7	8.7	1.8	
P305 – engine, emerg. gen.	4.7	4.1	0.4	
New engine, compressor	13.3	13.3	6.6	
P501 – TEG dehy			145	
P502 – TEG dehy			15	
Condensate tanks			34.6	
PWCS Total Emissions	146.4	142	204.4	16.69
PWDPP Equipment (per May 2003 renewal application)				
P303 – engine, emerg. Gen	34.1	7.2	7.2	See Table on Pages 18 – 19
P503 – EG dehy			7.14	
Fugitive VOCs from equipment leaks			10	
Condensate tank ¹			58.55	
Condensate loading equipment			8.34	
PWDPP Total emissions	34.1	7.2	91.23	13.46
PWDPP Equipment (per August 31, 2007 Submittal)				
P303 – engine, emerg. Gen ¹	32.74	4.47	0.95	See Table on Page 20
P503 – EG dehy			0.60	
Fugitive VOCs from equipment leaks			10	
condensate tank			4.75	
Condensate loading equipment ²			0.078	
PWDPP Total emissions	32.74	4.47	16.378	5.90
FACILITY TOTAL EMISSIONS (per PWDPP renewal application)	180.5	149.2	295.63	30.15
FACILITY TOTAL EMISSIONS (per PWDPP 8/31/07 submittal)	179.14	146.47	220.778	22.59

¹Emissions for the engine were revised to reflect the latest AP-42 emission factors. Note that previously the source had only used AP-42 emission factors for NO_x; however, the source has chosen now to use AP-42 emission factors for all pollutants.

²Although the APEN submitted with the renewal application indicated emissions from the condensate loading equipment to be above the APEN de minimis level, the source submitted information on August 31, 2007 indicating that they had incorrectly calculated emissions and that emissions from loading were below APEN de minimis levels. Since emissions are below the APEN de minimis level, the condensate loading equipment has not been included in the renewal permit, but emissions are shown in the above table for information purposes.

In the above table criteria pollutant potential to emit (PTE) for the engines is based on

the maximum hourly fuel consumption rate, emission factors and 8760 hrs/yr of operation or permitted emission limits, as appropriate. Potential to emit for the PWCS dehydrators is based on the higher emissions as reported for the original Title V permit application for P501 and requested (permitted) emissions for P502.

Potential to emit for the PWDPP equipment is based on information from the May 2003 renewal application and based on the August 31, 2007 submittal. The August 31, 2007 submittal reflects the control device that will be installed on the dehydrator in the future and the removal of three condensate tanks and reduced usage of the remaining tank. Potential to emit for the PWDPP engine and dehydrator is based on either current permitted or requested emissions (per the August 31, 2007 submittal). Potential to emit for the condensate tanks and loading equipment are based on the APENS submitted with the renewal application and the information in the August 31, 2007 submittal. Potential to emit for the PWDPP fugitive VOC emissions from equipment leaks is based on permitted emissions.

In the above table, the breakdown of HAP emissions by emission unit and individual HAP is provided on pages 18 - 19 of this document. As indicated in the footnotes for the table on pages 18 - 19, the HAP PTE was determined as follows: for the engines it is based on design rate, permitted annual hours of operation (or 8760 hrs/yr) and the most conservative emission factor from AP-42 or HAPCalc 2.0, for the PWCS dehydrators it is based on the method specified in the ONGP MACT, for the PWDPP dehydrator it is based on the "worst case" GLYCalc run included in the 2003 renewal application and condensate loading equipment it is based on the information provided in the APENS (PWCS APEN submitted 4/29/03 and for PWDPP APENS submitted 5/30/03). Although potential HAP emissions from the PWDPP dehydrator and condensate tanks will be lower in the future, due to the "once in always in" policy for MACT, HAP emissions are based on the information provided in the May 2003 renewal application as it more appropriately represents potential HAP emissions at or before the compliance date of the potentially applicable MACT standards.

For reference purposes, HAP emissions for the PWDPP, taking into account the reductions in the August 31, 2007 submittal, are provided in the table on page 20 of this document.

It should be noted that Questar generally reports and pays fees on potential emissions, which is an acceptable practice, and therefore actual emissions are not shown in the above table.

III. Discussion of Modifications Made

Source Requested Modifications

The source requested the following changes to their Title V permit:

May 23, 2003 Renewal Application

Section II, Condition 2.1

In the renewal application, submitted on May 30, 2003, the source requested that the criteria for the cold separator temperature be revised to 10 ° F. The source submitted a GLYCalc run showing that the emission limits in the permit could be met at the requested temperatures of 10 ° F. The permit was revised to include the higher cold separator temperature.

Appendix A – Insignificant Activities

The source submitted information with their renewal application indicating that the emissions from the condensate tanks and condensate loading equipment are above the APEN de minimis levels. Therefore, the source requested that the condensate tanks be removed from the insignificant activities list (note that the condensate loading equipment was not previously included in the insignificant activity list).

It should be noted that in the May 30, 2003 application, the source indicated that the condensate tanks were constructed after October 1984 and therefore, were subject to recordkeeping requirements in 40 CFR Part 60, Subpart Kb. However, since the application was submitted revisions were made to NSPS Subpart Kb (effective October 15, 2003) and under these revisions tanks that have a capacity of 75 m³ (19,813 gallons) or less are not subject to the requirements in NSPS Subpart Kb (40 CFR Part 60 Subpart § 60.110b(a)). The tanks are below the NSPS Subpart Kb threshold level (one 400 bbl tank = 16,800 gallons); therefore, requirements from NSPS Subpart Kb have not been included.

July 6, 2004 Submittal

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In a letter submitted on July 6, 2004, the source indicated that that Responsible Official for the facility had changed and requested that the Responsible Official be revised in the renewal permit. The change has been made as requested.

June 18, 2007 Submittal

The source submitted additional information to support the renewal application on June 18, 2007. This submittal was made in part to address a request from the Division and to submit revised APENs because the previous APENs were expiring.

The source submitted a revised APEN for the engine to revise the emission and fuel consumption limits. The source submitted a request to lower the fuel consumption limit in order to use the revised AP-42 NO_x emission factors and keep requested NO_x emissions below the PSD significance level of 40 tons/yr. In the APEN the source also calculated and requested to use AP-42 emission factors for both CO and VOC

emissions. The Division approved the use of AP-42 emission factors but indicated that the source would have to use the more conservative CO emission factor (in their submittal, the source used the less conservative AP-42 CO emission factor).

In addition, the source submitted a revised APEN to request a lower permitted natural gas processing rate for the glycol dehydrator. This results in a lower requested VOC emissions.

August 31, 2007 Submittal

Engine

The source submitted a revised APEN that uses the more conservative CO emission factor. The renewal permit reflects the lower fuel consumption limit (as first noted under the discussion of the June 18, 2007 submittal) and AP-42 emission factors for CO and VOC as well as NO_x. The requested emissions and emissions factors are shown in the table below.

Pollutant	Emission Factor (lbs/mmBtu)	Emission Factor Source	Requested Emissions (tons/yr)
NO _x	4.08	AP-42, Section 3.2 (dated July 2000), Table 3.2-2, 4-stroke lean burn engines (NO _x at 90- 105% load and CO < 90 % load).	32.74
CO	0.557		4.47
VOC	0.118		0.95

Note that since requested VOC emissions are below the APEN de minimis level, a limit for VOC emissions will not be included in the permit.

Glycol Dehydrator

As discussed previously, the source has committed to installing an enclosed combustor on the glycol dehydrator within 120 days after the COC is signed. The combustor is required to meet a 90% control efficiency. Requested emissions for the combustor is based on the worst-case GLYCalc run submitted June 18, 2007 and a control efficiency of 90%.

Additional requirements and monitoring have been added to address the combustor, as discussed below.

The combustor is subject to the 20% opacity requirements in Colorado Regulation No. 1, Section II.A.1.

There is a 30% opacity requirement specified in Reg 1, Section II.A.4 which applies under the following certain specific conditions: building of a new fire, cleaning of fire boxes, soot blowing, start-up, any process modification or adjustment or occasional

cleaning of control equipment. Based on engineering judgment the Division considers that building a new fire, cleaning of fire boxes and soot-blowing does not apply to the operation of the combustor on the dehydrator. The combustor itself is a control device, but to reduce VOC emissions, not PM emissions and therefore would not affect opacity emissions significantly. In addition, the control device cannot be readily adjusted or cleaned during operation. Therefore, the Division considers that adjustment or occasional cleaning of control equipment are not activities applicable to this unit. Process modifications and startup may apply to the combustor, however, based on engineering judgment, the Division believes that such activities would be unlikely to occur for longer than six minutes. Therefore, the 30% opacity requirement has not been included in the operating permit.

Since uncontrolled VOC emissions are low for this unit (approx 6 tons/yr) and the flare control efficiency is conservative, the Division considers that a performance test is not necessary to verify the control efficiency of the unit. The source has provided information indicating that performance tests conducted on the same unit on other glycol dehydrators have shown that the combustor can meet a 90% control efficiency. The Division considers that monitoring the presence of a flame is sufficient to monitor the operation of the combustor. In the August 31, 2007 submittal to address the addition of the flare, the source calculated NO_x and CO emissions from the flare, assuming that additional fuel gas would have to be added to bring the heat content of the regenerator overheads to 250 Btu/scf. However, on November 13, 2007, the source submitted information indicating that there is existing equipment in place to remove some water from the regenerator overheads stream but that the piping would be modified significantly to remove additional water from the regenerator overheads stream. When the water is removed from the regenerator overheads stream, the heat content of the gas stream is well over 250 Btu/scf. Therefore, the Division has concluded that supplemental fuel is not required for the combustor.

NO_x and CO emissions from the combustor were below the APEN de minimis level; therefore, the permit will not include any emission limits or monitoring requirements for NO_x and CO emissions.

Condensate Tanks

As indicated previously, the source has agreed to remove three of the atmospheric condensate tanks from service in order to address the potential PSD issues identified in processing the renewal application. As of January 2007, the three condensate tanks have not been utilized and under the provisions of the draft compliance order on consent, the source will be required to remove three tanks from service and permit emissions below 5 tons/yr of VOC within 30 days of signing the COC. The source has submitted an APEN requesting permitted VOC emissions at 4.75 tons/yr of VOC, with a corresponding throughput limit of 550 bbls per year. Since the source is currently only using one tank, the permit will only include one condensate tank and the requested emission limit of 4.75 tons/yr of VOC. Monitoring for the condensate tank has been included and is discussed later under "other modifications – New Section II.4 –

condensate storage tank”.

It should be noted that the source indicated that tank 1681 would remain in service. According to the renewal application, this tank was installed in January 2003 to replace tank 954.

Condensate Loading Equipment

In their August 31, 2007 submittal, the source indicated that they had estimated emissions from condensate loading incorrectly in their renewal application. In their renewal application, the source has used HAPCalc to calculate emissions and had used the splash-loading scenario to estimate emissions from unloading the atmospheric condensate tanks and the vapor balance service scenario to estimate emissions from unloading the pressurized tanks.

In their August 31, 2007 submittal the source used HAPCalc to calculate emissions with the submerged loading option to calculate emissions from unloading the atmospheric condensate tank. VOC emissions were calculated based on the requested level of 550 bbl per year for the condensate tank and were less than 0.1 ton/yr. Using an emission factor determined from the August 31, 2007 submittal, the Division estimates that if the source had used this method to calculate emissions based on the requested level in the renewal application (7200 bbl/yr), VOC emissions would have been approximately 1 ton per year, which is still below the APEN de minimis level.

In their August 31, 2007 submittal, the source indicated that using HAPCalc method estimates emissions from unloading an atmospheric tank and not a pressurized tank. The source indicates that there would essentially be no emissions of VOC from vapor balance loading of pressurized product and that any emissions would be considered fugitive. The source indicated that fugitive emission from components, including the truck load-out skid are included in the APEN for fugitive VOC emissions from equipment leaks (Section II. 3 of the permit) and that those components are subject to the leak detection and repair (LDAR) program required by 40 CFR Part 60 Subpart KKK. The Division agrees with the source's position on loading emissions from the pressurized tank. Since emissions from condensate loading from the atmospheric tank are below the APEN de minimis level the condensate loading equipment will be included in the insignificant activity list in Appendix A.

Other Modifications

In addition to the modifications requested by the source, the Division has included changes to make the permit more consistent with recently issued permits, include comments made by EPA on other Operating Permits, as well as correct errors or omissions identified during inspections and/or discrepancies identified during review of this renewal.

The Division has made the following revisions, based on recent internal permit

processing decisions and EPA comments, to the PWDPP Renewal Operating Permit with the source's requested modifications. These changes are as follows:

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- Monitoring and compliance periods and report and certification due dates are shown as examples. The appropriate monitoring and compliance periods and report and certification due dates will be filled in after permit issuance and will be based on the permit issuance date. Note that the source may request specific monitoring/compliance periods or report/certification due dates. However, it should be noted that with this option, depending on the permit issuance date, the first monitoring period and compliance period may be short (i.e. less than 6 months and less than 1 year).
- Added language specifying that the semi-annual reports and compliance certifications are due in the Division's office and that postmarks cannot be used for purposes of determining the timely receipt of such reports/certifications.

General

- The Reg 3 citations were revised throughout the permit, as necessary, based on the recent revisions made to Reg 3.

Section I - General Activities and Summary

- The language in Condition 1.1 was changed to update the facility description and to indicate that Dinosaur National Monument is within 100 km of this facility. Although Dinosaur National Monument is not a federal Class I designated area, this area has been designated by the State to have the same sulfur dioxide increment as federal Class I designated areas.
- General Conditions 3.d (common provisions – affirmative defense for malfunctions) and 3.g (common provisions – affirmative defense for startups and shutdowns) were added as a state-only condition in Condition 1.4.
- Revised Conditions 3.1 and 3.2 to be more consistent with other permits and to reflect changes at the facility.
- Based on comments made by EPA on another operating permit, the phrase "Based on the information provided by the applicant" was added to the beginning of Condition 4.1 (112(r)).
- Revised the table in Condition 5.1 (summary of emission units) to add the condensate storage tanks and condensate loading equipment.
- Added a "new" Section 5 for compliance assurance monitoring (CAM). Note that no emission units associated with the PWDPP are subject to CAM.

Section II - Specific Permit Terms

Section II.1 - Engine

- Added language to Condition 1.1 to indicate the source of the emission factors. In addition, minor language and format changes were made.
- Emission factors from AP-42 have been revised; therefore, since the NO_x emission factor in the current permit is from AP-42 the Division has included the current emission factor in the renewal permit. Note that using the revised AP-42 emission factor and the permitted fuel consumption rate indicated in the current Title V permit, NO_x emissions would exceed the permitted emission limits and would exceed the PSD significance level (40 tons/yr). As discussed previously, the source submitted APENs on June 18 and August 31, 2007, requesting lower fuel consumption and emission limits for this engine. Based on the requested fuel consumption limit and the revised AP-42 emission factor, requested emissions for NO_x are below the PSD significance level.
- Condition 1.3 of the permit identifies specific ASTM methods to be used for fuel sampling and analysis. Since ASTM methods may be revised or replaced, the permit will be changed to specify that the appropriate ASTM methods, or equivalent, if approved by the Division in advance shall be used to determine the heat content of the fuel. In addition, the term “lowest gross heating value” proved to be confusing in many cases. The Division had intended that the source use the higher heating value of the fuel in emission calculations; therefore, the Division revised the permit to specify that the higher heating value of the fuel would be used in the emission calculations.
- Under “monitoring method” in the Table for Condition 1.3, replaced “EPA Methods” with “ASTM Methods”.
- The language in Condition 1.4 (opacity) was rewritten to more closely resemble the language in Regulation No. 1.

Note that no condition is included for the 30% opacity standard, which is applicable during certain operating activities. The specific activities under which the 30% opacity standard applies are: building a new fire, cleaning of fire boxes, soot blowing, startup, any process modification, or adjustment or occasional cleaning of control equipment. Based on engineering judgment the Division considers that building a new fire, cleaning of fire boxes and soot-blowing does not apply to the operation of internal combustion engines. In addition, this engine does not have a control device, so adjustment or occasional cleaning of control devices do not apply to this engine. Process modifications and startup may apply to engines, however, based on engineering judgment, the Division believes that such activities would be unlikely to occur for longer than six minutes. Therefore, the 30% opacity requirement has not been included in the operating permit.

- In the table under “Monitoring, Method and Interval”, for Condition 1.4 (opacity) included “fuel restriction” and “only natural gas is used as fuel”.
- Based on EPA’s response to a petition on another Title V operating permit, minor language changes were made to Conditions 1.1, 1.2 and 1.4 (both in the table and the text for 1.2 and 1.4) to clarify that only natural gas is used as fuel in these engines.

Section II.2: Unit P503 – Key Engineering Ethylene Glycol Regeneration Unit

- Revised Condition 2.1 to indicate that the VOC emissions are based on the “worst case” analysis submitted on June 18, 2007.
- The current permit allows for the frequency of extended gas analyses to be relaxed if the BTEX constituents remain consistently below the levels provided in the table in Condition 2.1.2. According to the Division’s August 25, 2005 inspection report, the frequency of the extended gas analyses was at semi-annual and the source has indicated that the frequency is currently at annual. Therefore, the permit will be revised to state that the frequency of extended gas analyses is annual. The permit will also contain provisions to increase the frequency of analyses if the BTEX levels indicated in the table in Condition 2.1 are exceeded and specifies that the frequency will increase based on when the sample was taken.
- Language was added to Condition 2.1.4 to indicate more specifically when a GLYCalc run is triggered.
- Added language to Condition 2.1.5 to describe how monthly emissions would be determined for months in which a GLYCalc run is triggered.

Section II.3 – F701 – Fugitive VOC Emissions From Equipment Leaks

- Although it is implied in the permit, the permit was modified to clarify that the emission calculations in Condition 3.1 shall be conducted on an annual basis.
- Changed the emission factor descriptions in Condition 3.1 to more closely match the descriptions in EPA’s Protocol for Equipment Leak Emission Estimates (e.g. there is no category for relief valves or compressor seals).
- Added emission factors for light liquids to Condition 3.1. The emission factors included in the permit are from Table 2-4 of EPA’s Protocol for Equipment Leak Emission Estimates but for gas only and it appears from past inspection reports that the gas emission factors are being used for components in light liquid service.
- Revised Condition 3.1 to remove the initial hard component count. The requirement to conduct a hard component count every five years remains in the

permit and the Division has noted the date of the last hard count in the permit for information purposes.

- Removed Condition 3.3.2 (requirement to record startups, shutdowns and malfunctions in § 60.7(b)), since § 40.486(k), as referenced in § 60.635(a), indicates that § 60.7(b) does not apply.
- Removed Condition 3.2.4 (requirement to submit a KKK applicability report) since the report was submitted as required by the original permit and the report is included in Appendix G of the permit for information purposes.
- Condition 3.2.3 was revised to replace “compliance monitoring reporting” with “monitoring and permit deviation reporting”.

“New” Section II.4 – Condensate Storage Tank

As discussed previously, with recent revisions to Regulation No. 3 condensate storage tanks are no longer considered insignificant activities if VOC emissions are above the APEN de minimis level. The source has originally submitted an APEN addressing the four condensate tanks in their renewal application. However, based on the Division’s review and potential PSD issues that were uncovered in processing the renewal application, the source agreed to remove all but one of the condensate tanks from service and limit VOC emissions to under 5 tons/yr of VOC. The source submitted a revised APEN addressing the single condensate tank and requested VOC emissions of 4.75 tons/yr on August 31, 2007. The Division has included the requested emissions and throughput limits for the condensate tank in the renewal permit. Requested emissions from the condensate tank were estimated using API E & P Tanks Version 2.0. Typically for sources using this method to estimate VOC emissions from condensate tanks, the Title V permit has specified monitoring for the E & P tanks input and that the model be run to calculate annual emissions. However, in this case, since it is expected that the tank throughput is unlikely to approach the limits, the Division will allow emissions to be calculated using an emission factor derived from the E & P tanks run. In the event that the tank throughput approaches the limit, then the Division will require that emissions be evaluated using E & P tanks. For this analysis a new low pressure oil sample must be taken and the RVP and API gravity of the sales condensate shall be determined.

Colorado Regulation No. 7 Statewide Requirements for Oil and Gas Operations

Colorado Regulation No. 7 was revised December 17, 2006 (effective March 4, 2007) to include control requirements for oil and gas operations and natural gas-fired reciprocating internal combustion engines. The revisions potentially apply to the emission units at this facility. The statewide requirements apply to atmospheric condensate tanks with uncontrolled actual emissions equal to or greater than 20 tons/yr of VOC, glycol dehydrators with uncontrolled actual emissions equal to or greater than 15 tons/yr and engines constructed or relocated in Colorado after July 1, 2007. Since the condensate tank and glycol dehydrator have permitted emissions below the

threshold levels, the statewide requirements do not apply to these emission units. In addition, since the engine commenced operation prior to July 1, 2007, the control requirements do not apply to the engine located at this facility.

Section III – Permit Shield

- The citation in the permit shield was corrected and revised to reflect the revisions to Reg 3. The reference to Part C, Section XIII was changed to Part C, Section XIII.B and references to Part C, Section V.C.1.b and C.R.S. 25-7-111(2)(I) were removed, since they did not address the permit shield.

Section IV - General Conditions

- Revisions were made to the Common Provisions Regulation (general condition 3), effective September 30, 2002 and March 7, 2007. The appropriate revisions were made to the language in the permit. Note that some provisions of the affirmative defense for startups and shutdowns (general conditions 3.g) requirements are state-only. In addition, the upset provisions were replaced with the affirmative defense provisions for excess emissions during malfunctions. These requirements are state-only enforceable until approved by EPA into Colorado's state implementation plan (SIP). Those sections are identified in Section I, Condition 1.4.
- Replaced the reference to "upset" in Condition 5 (emergency provisions) and 21 (prompt deviation reporting) with "malfunction".
- The citation in General Condition 17 (open burning) was revised. The open burning requirements are no longer in Reg 1 but are in new Reg 9. In addition, changed the reference in the text from "Reg 1" to "Reg 9".
- General Condition No. 21 (prompt deviation reporting) was revised to include the definition of prompt in 40 CFR part 71.
- Replaced the phrase "enhanced monitoring" with "compliance assurance monitoring" in General Condition No. 22.d.

Appendices

- Appendix B and C were replaced with revised Appendices.
- Changed the mailing address for EPA in Appendix D.
- Appendix G was replaced with a copy of the NSPS KKK report submitted by the source on (as required by Section II, Condition 3.2.4) in the format specified in "old" Appendix G.

PWDPP and PWCS HAP Emissions (based on ONGP Method for Glycol Dehydrators or Regeneration Units)

HAPS per Division Analysis

Unit	acetaldehyde	acrolein	benzene	toluene	Ethyl benzene	HAP Emissions (tons/yr)		n-hexane	ethylene glycol	2,2,4-trimethyl-pentane	methanol	total
						xylene	formaldehyde					
	Power Wash Dew Point Plant Equipment (97OPMF194)											
PWDPP - P303 engine, EG	0.10	0.07	0.02	0.10		0.01	0.83	0.01			0.03	1.18
PWDPP - P503 EG dehy			2.32	1.98	0.08	1.36		0.09	3.40	0.00		9.22
PWDPP - P701 Fugitive VOCs			0.01	0.01	0.00	0.00		0.81				0.83
PWDPP - cond tanks			0.62	0.39	0.01	0.08		0.92		0.08		2.10
PWDPP - cond truck loading			0.01	0.03	0.00	0.00		0.09		0.01		0.14
Total 97OPMF194 Equipment	0.10	0.07	2.98	2.50	0.09	1.44	0.83	1.92	3.40	0.08	0.03	13.46
	Powder Wash Compressor Station Equipment (95OPMF031)											
PWCS - P101 engine, comp.	0.03	0.03	0.06	0.02		0.00	0.25				0.03	0.41
PWCS - P102 engine, comp	0.06	0.06	0.14	0.05		0.01	0.63				0.07	1.01
PWCS - P103 engine, comp	0.06	0.06	0.14	0.05		0.01	0.63				0.07	1.01
PWCS - P104 engine, comp	0.07	0.06	0.16	0.05		0.01	0.72				0.07	1.15
PWCS - P304 engine, EG	0.03	0.03	0.06	0.02		0.00	0.29				0.03	0.47
PWCS - P305 engine, EG	0.03	0.03	0.06	0.02		0.00	0.29				0.04	0.48
PWCS - P501 TEG dehy			3.90	2.86	0.12	0.77		0.41		0.03		8.09

HAPS per Division Analysis

Unit	acetaldehyde	acrolein	benzene	toluene	Ethyl benzene	HAP Emissions (tons/yr)		n-hexane	ethylene glycol	2,2,4-trimethyl-pentane	methanol	total
PWCS - P502 TEG dehy			1.77	0.88		0.04		0.12		0.01		2.82
PWCS - cond tanks			0.31	0.20	0.01	0.03		1.55		0.11		2.21
Proposed new engine	0.13	0.13	0.29	0.09		0.02	1.32				0.14	1.47
Total 95OPMF031 Equipment	0.28	0.27	6.61	4.14	0.13	0.89	2.62	2.08	0.00	0.15	0.30	17.65
Total 95OPMF031 after new engine*	0.26	0.26	6.40	4.12	0.13	0.89	1.96	2.08	0.00	0.15	0.28	16.69
FACILITY TOTAL	0.39	0.34	9.59	6.64	0.22	2.33	3.65	3.99	3.40	0.23	0.33	31.11
FACILITY TOTAL - AFTER NEW ENGINE*	0.37	0.33	9.38	6.63	0.22	2.33	3.45	3.99	3.40	0.23	0.31	30.14

Engine emissions are based on most conservative emission factor (from AP-42 and HAPCalc 2.0, for 4-cycle rich burn engines and/or 4-cycle lean/clean burn) for each pollutant.

Dehy emissions for PWCS from 5/28/03 submittal, uses HH guidelines for calculating emissions.

Condensate tank emissions from PWCS E & P tank runs (submitted 4/29/03), emissions based 3 inlet gas lines, each based on 5110 bbl/yr (14 bbl/day) this is a conservative estimate.

Fugitive VOC emissions for PWDPP are based on emission estimates submitted by QGMC on 5/20/03 with the renewal application

Condensate tank and condensate truck loading emissions for PWDPP are based on emission estimates (PTE) submitted by QGMC on 5/20/03 with the renewal application.

Dehy emissions for PWDPP are based on emission estimates submitted by QGMC on 5/20/03 with the renewal application, this is worst case analysis which is conservative does not use HH guidelines. Note that ethylene glycol emissions are not calculated in GLYCalc, therefore, they are not considered part of the VOC emission limit for the unit.

Ethylene glycol emissions for PWDPP dehy are based on 730 gal/yr glycol makeup per original Title V application, assuming all glycol is emitted. This is a conservative estimate.

HAPS per Division Analysis
Based on Dehy Permitted Emissions

Unit	HAP Emissions (tons/yr)											
	acetaldehyde	acrolein	benzene	toluene	ethyl benzene	xylene	formaldehyde	n-hexane	ethylene glycol	2,2,4-trimethyl-pentane	methanol	total
	Power Wash Dew Point Plant Equipment (97OPMF194)											
PWDPP - P303 engine, EG	7.87E-02	5.05E-02	1.31E-02	6.80E-02		3.54E-03	5.81E-01	1.05E-02			2.35E-02	8.29E-01
PWDPP - P503 EG dehy			6.00E-01	6.00E-01	6.00E-01	6.00E-01		6.00E-01	3.40E-00	6.00E-01		4.00E-00
PWDPP - P701 Fugitive VOCs			1.12E-02	6.10E-03	9.00E-04	2.00E-03		8.07E-01				8.27E-01
PWDPP - cond tanks			6.10E-02	4.90E-02	1.00E-03	1.00E-02		1.11E-01		9.00E-03		2.41E-01
PWDPP - cond truck loading			3.00E-04	3.00E-04	0.00E+01	1.00E-04		8.00E-04		1.00E-04		1.60E-03
Total 97OPMF194 Equipment	7.87E-02	5.05E-02	6.86E-01	7.23E-01	6.02E-01	6.16E-01	5.81E-01	1.53E-00	3.40E-00	6.09E-01	2.35E-02	5.90E-00

Engine emissions are based on most conservative emission factor (from AP-42 and HAPCalc 2.0, for 4-cycle rich burn engines and/or 4-cycle lean/clean burn) for each pollutant and reflect lower fuel consumption per 6/18/07 submittal.

Fugitive VOC emissions for PWDPP are based on emission estimates submitted by QGMC on 5/20/03 with the renewal application

Condensate tank and condensate truck loading emissions for PWDPP are based on emission estimates (PTE) submitted by QGMC on August 31, 2007

Dehy emissions for PWDPP are based on permitted emissions (August 31, 2007 requested emissions).

Ethylene glycol emissions for PWDPP dehy are based on 730 gal/yr glycol makeup per original Title V application, assuming all glycol is emitted. This is a conservative estimate.